institut für astrophysik
UNIVERSITÄTSSTERNWARTE WIEN

Univ.-Prof. Dr. Bodo Ziegler
Leiter des Instituts

# Seminar

von

Herwig Peterlik

(Fakultät für Physik, Universität Wien)

## Carbon fibers and carbon fiber based composites for aerospace applications

One of the most extreme challenges in materials science is the development of materials, which are able to sustain extremely high temperatures. Rocket nozzles or the wings of the space shuttle are examples for technical applications, where such a harsh environment requires these advanced materials. The lecture presents first how to measure mechanical properties of composites at high temperatures for carbon fiber reinforced carbon (C/C), the material of the nozzle of the European space rocket Ariane 5, as an example. Then, the influence of high temperatures and load on the structure and the structural development of carbon fibers are shown. In-situ experiments at synchrotron radiation sources allow following the structural development directly, even for single carbon fibers with a diameter of only some microns.

## Montag, 27. November 2017, um 15:00 Uhr im HS

des Institutes für Astrophysik, Türkenschanzstraße 17, 1180 Wien